REMARKS/ARGUMENTS

Claims 1-12 are pending in this application. Claims 1-12 had been rejected.

Claims 1-9, 11, and 12 had been rejected under 35 U.S.C. 102(b) over Elings (US 5,077,473). This rejection is respectfully traversed for the following reasons.

It is well established that a claim is anticipated under 35 U.S.C. §102, only if each and every element of the claim is found in a single prior art reference.[1] Moreover, to anticipate a claim under 35 U.S.C. §102, a single source must contain each and every element of the claim "arranged as in the claim."[2] Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference.[3] If each and every element of a claim is not found in a single reference, there can be no anticipation.

Elings analyses data captured by a scanning microscope, calculates supplemental signals defining supplemental motion in two dimensions, and adds these supplemental signals to signals driving scanners of the scanning microscope in two dimensions, in particular, to compensate for drift. See Figs. 2 and 3.

The present invention does not modify signals driving any scanners; in fact, the microscope used to practice the invention does not have to be a scanning microscope (see paragraph [0025]). Control variables determined by analyzing an image or images are delivered in the present invention to non-scanning actuators. The non-scanning actuators are used in the present invention, for example, to change the intensity of the illuminating light, to change the gain of the photomultiplier of a detector unit, etc. (see paragraph [0030]).

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[1] Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).
[2] Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).
[3] Lewmar Marine Inc. v. Barient, Inc., 827 F.2d 744, 747, 3 U.S.P.Q. 2d 1766, 1768 (Fed. Cir. 1987), cert. denied, 484 U.S. 1007 (1988).
[4] Titanium Metals Corp. v. Banner, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

In other words, a non-scanning actuator is an actuator not performing scanning.

Examiner states on page 2 of the pending Office Action that Elings discloses or refers to non-scanning actuators in column 4, lines 13-17:

Because Elings's actuators are completely independent from the scanning process. Examiner construes such actuators to be non-scanning actuators.

Applicant respectfully disagrees.

Elings, in column 4, lines 13-17, states the following (with emphasis as provided by the Examiner in the pending Office Action):

It is another object of this invention to provide a drift compensation capability for STMs [Scanning Tunneling Microscopes], and the like, wherein compensation motion is independent of the raster scan or other positioning of the tip and can be a constant motion or may vary with time.

The word "independent" in the cited part of Elings refers to the fact that the compensating motion of the actuators is independent of the scanning motion of the actuators; not to independence of the actuators from the scanning process.

The actuators (such as scan drivers 24 and 26 in Fig. 2 of Elings) referred to in the cited part of Elings are still performing the scanning, the compensating motion (or offset 30 in Fig. 2) is added (32 in Fig. 2) to their scanning motion (28 in Fig. 2), and the actuators are performing both motions -- scanning and compensating -- simultaneously.

The actuators referred to in the cited part of Elings are not independent from the scanning process, they are performing scanning (in addition to other motions); therefore, they are scanning actuators.

On the contrary, the non-scanning actuators of the present invention are not performing scanning and, contrary to the Examiner's assertion, are not disclosed or referred to in Elings, column 4, lines 13-17.

Examiner also equates numeral 30 of Elings with the non-scanning actuators of the present invention (see pending Office Action, page 3, line 8 from the bottom).

Applicant respectfully disagrees. Numeral 30 of Elings is a position generator (col. 7, lines 13-15, of Elings) or an offset generator (col. 7, line 34, of Elings), which generates an electrical signal for subsequent addition to another electrical signal in the adder 32, Fig. 2 of Elings; numeral 30 of Elings is not an actuator at all.

An actuator is "a device responsible for actuating a mechanical device, such as one connected to a computer by a sensor link, or a servomechanism that supplies and transmits a measured amount of energy for the operation of another mechanism or system" (http://dictionary.reference.com/browse/actuator) or "a mechanical device for moving or controlling something" (http://www.merriam-webster.com/dictionary/actuator) as opposed to a device for generating an electrical signal for subsequent addition to another electrical signal, such as numeral 30 of Elings.

Furthermore, the electrical signal generated by numeral 30 of Elings, after passing through the adder 32 in Fig. 2 of Elings, is fed to scanning actuators of Elings (scan drivers 24 and 26 in Fig. 2 of Elings), further negating Examiner's equating of numeral 30 of Elings with the non-scanning actuators of the present invention.

Claim 1 comprises the element of transferring the control variable to at least one non-scanning actuator of the microscope, the control variable being determined by analyzing an image or images. This element is not found in Elings. Therefore, Claim 1 is patentable over Elings under 35 U.S.C. §102(b) and should be allowed.

The above-presented argument also supports patentability of Claims 2-9, 11, and 12. Allowance of the referenced Claims is respectfully solicited.

Claim 10 had been rejected under 35 U.S.C. 103(a) over Elings in view of Tsuneta (US 6,570,156). This rejection is respectfully traversed for the following reasons.

For an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a prima facie case of obviousness. The Patent Office must meet the burden of establishing that all elements of the invention are disclosed in the cited publications, which must have a suggestion, teaching or motivation for one of ordinary skill in the art to modify a reference or combined references.[5] The cited publications should explicitly provide a reasonable expectation of success, determined from the position of one of ordinary skill in the art at the time the invention was made.[6]

Dependent Claim 10 depends on independent Claim 6. As argued above, Claim 6 comprises transferring a control variable to at least one non-scanning actuator of the microscope, the control variable being determined by analyzing an image or images; and this element is not taught or suggested by Elings, Tsuneta or their combination. Therefore, Claim 10 is patentable and nonobvious over Elings and Tsuneta under 35 U.S.C. §103(a) and should be allowed.

It is believed that the present application is in condition for allowance. A Notice of Allowance is respectfully solicited in this case. Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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[5] In re Lee, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).
[6] In re Fine, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); Amgen v. Chugai Pharmaceuticals Co., 18 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).